

UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF NEW YORK

-----x

HAYDEN AI TECHNOLOGIES, INC.,

Plaintiff,

**MEMORANDUM & ORDER**  
23-CV-3471 (EK) (JRC)

-against-

SAFE FLEET HOLDINGS LLC and SAFE  
FLEET ACQUISITION CORP.,

Defendants.

-----x

ERIC KOMITEE, United States District Judge:

Plaintiff Hayden AI Technologies, Inc. brought this suit against Safe Fleet Holdings LLC, Safe Fleet Acquisition Corp., and Seon Design (USA) Corp. (a subsidiary of Safe Fleet Holdings LLC). Hayden holds certain patents for an automated bus lane enforcement, or "ABLE," system – a system to detect and report traffic violations in bus lanes.<sup>1</sup> The Safe Fleet defendants offer a competing product called "ClearLane."

Hayden alleges that ClearLane infringes one of its patents, and has moved for a preliminary injunction, contending that post-trial damages cannot adequately compensate for the harms Safe Fleet's alleged infringement will cause while this

---

<sup>1</sup> Hayden's initial complaint, ECF. 1, alleged that Safe Fleet infringed two patents – both the "'919 patent" (defined below) and U.S. Patent No. 11,322,017 (the "'017 patent"). In September 2023, Hayden filed an amended complaint, ECF. 58, which removed its claims under the '017 patent. As a result, Hayden's arguments regarding infringement of its '017 patent are no longer relevant to this case.

suit is pending. As set forth below, the motion is denied because Hayden has not shown a reasonable likelihood of success on the merits.

## **I. Background<sup>2</sup>**

### **A. Hayden's ABLE System**

Hayden's ABLE system is a mobile platform designed to detect potential bus-lane violations (e.g., a car driving or parked in a bus lane) and facilitate enforcement. Decl. of Christopher Carson ("Carson Decl.") ¶¶ 2-9, ECF No. 16-13.<sup>3</sup> According to Hayden's Chief Executive Officer, its ABLE system has five primary features: (1) it uses cameras mounted inside buses, together with "AI technology" to identify the road, vehicles, and other objects; (2) it detects potential traffic violations based on "traffic rules" that the system has "learned"; (3) after detecting a potential violation, the system captures license plate information and processes the relevant data into an "evidence package"; (4) it sends that package to Hayden's AI-supported cloud server for processing; and (5)

---

<sup>2</sup> This factual background is taken from the record available at this stage, which includes the patents themselves, declarations and evidentiary exhibits submitted by both parties, and deposition testimony. See *Mullins v. City of New York*, 626 F.3d 47, 52 (2d Cir. 2010) (at the preliminary injunction stage, courts may consider evidence such as "affidavits, depositions, and sworn testimony, even when they include hearsay").

<sup>3</sup> Unlike Safe Fleet, Hayden does not appear to market its ABLE system under a particular product name. See, e.g., *id.* ¶ 4.

Hayden then transmits the package to the relevant law enforcement agency for review and enforcement. *Id.* ¶ 9.

In October 2022, the Metropolitan Transit Authority (“MTA”) awarded Hayden a contract to install its ABLE system on 300 New York City buses, with an option to expand to an additional 200 buses. *Id.* ¶ 27. Hayden installed the initial 300 units between August and December 2022. *Id.* ¶ 28.

#### **B. The Patents-in-Suit**

Since its founding in 2019, Hayden has obtained three patents; in its Third Amended Complaint, ECF No. 80, it references two patents covering its ABLE system – U.S. Patent No. 11,003,919 (the “’919 patent”) and Patent No. 11,164,014. Only the ’919 patent is at issue for the purposes of Hayden’s preliminary injunction motion. Pl. Br. in Supp. of Prelim. Inj. (“Pl. Br.”) 5, ECF No. 16-1.<sup>4</sup> The ’919 patent is entitled “Systems and Methods for Detecting Traffic Violations Using Mobile Detection Devices” and was issued on May 11, 2021. ECF No. 1-1. The patent application describes “an improved traffic violation system” that “addresses the challenges faced by traditional traffic violation detection systems” in order to “improve traffic safety and enable transportation efficiency.”

---

<sup>4</sup> Page numbers in citations to record documents refer to ECF pagination, with the exception of transcripts, briefs, and the patents. Citations to the patents refer to numbered columns, rather than page numbers.

*Id.* at 1:47-53. Generally, the '919 patent system collects and processes video data, uses that data to assess potential traffic violations, and transmits that information to a centralized server which can "generate a simulation of the traffic violation utilizing a game engine." *Id.* at 6:18-21. That server then uses its "reasoning engine" to decide whether any "mitigating events" should preclude a determination that a traffic violation occurred, and arrives at an assessment. *Id.* at 6:21-25.

**C. Safe Fleet's ClearLane System and the Siemens ABLE System**

In 2018, Seon Design (USA) Corp. — a wholly owned subsidiary of defendant Safe Fleet Holdings LLC — began discussions with the MTA about supplying an ABLE system. Decl. of Daniel Pulskamp ("Pulskamp Decl.") ¶¶ 3, 7, ECF No. 28-23.<sup>5</sup> Safe Fleet's leadership "understood" from those conversations that the MTA was also working with other sellers of ABLE systems. These included Siemens Mobility, which sold a competing system operating under the "LaneWatch" name. *Id.* ¶ 8. Indeed, in 2019, the MTA awarded Siemens a contract for the installation and maintenance of 123 ABLE units, and Siemens announced the launch of its system in New York City in December of that year. See ECF No. 28-3; ECF No. 28-9. Also in 2019, Safe Fleet received a request for information from the MTA

---

<sup>5</sup> This order generally refers to Safe Fleet Holdings LLC, Safe Fleet Acquisition Corp., and its subsidiary Seon Design (USA) Corp. collectively as "Safe Fleet."

regarding the creation and installation of an ABLE system on certain MTA buses; Safe Fleet affirmed its interest in the project in June of that year. Pulskamp Decl. ¶¶ 9-10.

Over the next three years, Safe Fleet completed its ClearLane system and received MTA approval to test it on city buses. In November 2020, Safe Fleet and the MTA entered into an agreement for a year-long pilot program, beginning with three buses in May 2021. *Id.* ¶¶ 12-13. While the pilot proceeded, during an August 2021 meeting, the MTA informed Safe Fleet about a planned 1,000-unit expansion of ABLE systems. *Id.* ¶ 14. The MTA stated that, contingent on its certification of Safe Fleet's system, it intended to split the production contract between Safe Fleet and Hayden, with each providing 500 units. *Id.* Ultimately, in July 2022, after completion of the pilot program, the MTA certified Safe Fleet's ClearLane system. *Id.* ¶ 15.

**D. Safe Fleet's May 2023 Contract with the MTA**

In 2022, after Hayden had already contracted to install its ABLE system on "up to" 500 City buses, both Hayden and Safe Fleet bid for an MTA proposal to install ABLE systems on 623 additional buses. Carson Decl. ¶ 29. During a meeting on May 3, 2023, the MTA informed Hayden that the agency was awarding the contract to Safe Fleet. *Id.* ¶ 30. Based on that conversation, Hayden came to the "understanding" that Safe Fleet had offered a lower price. *Id.* On May 4, the MTA awarded Safe

Fleet the contract for the purchase of 623 ABLE system units.  
Pulskamp Decl. ¶ 16.

## II. Legal Standard

The Patent Act permits courts to issue injunctions to “prevent the violation of any right secured by patent.” 35 U.S.C. § 283. Because an injunction under Section 283 raises questions unique to patent law, the law of the Federal Circuit governs. *Revision Military, Inc. v. Balboa Mfg. Co.*, 700 F.3d 524, 525–26 (Fed. Cir. 2012). A plaintiff seeking a preliminary injunction must establish: “(1) likelihood of success on the merits, (2) irreparable harm absent immediate relief, (3) the balance of interests weighing in favor of relief, and (4) that the injunction serves the public interest.” *Silfab Solar, Inc. v. United States*, 892 F.3d 1340, 1345 (Fed. Cir. 2018).<sup>6</sup> Before issuing an injunction, “the district court must weigh and measure each factor against the other factors and against the form and magnitude of the relief requested.” *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1350 (Fed. Cir. 2001). The court cannot issue an injunction unless the plaintiff establishes *both* of the first two factors. *Silfab Solar*, 892 F.3d at 1345. The heavy burden on the plaintiff reflects the fact that a preliminary injunction “is an

---

<sup>6</sup> Unless otherwise noted, when quoting judicial decisions this order accepts all alterations and omits citations and internal quotation marks.

extraordinary remedy.” *Winter v. Nat. Res. Def. Council*, 555 U.S. 7, 24 (2008).

Neither party sought the opportunity to present testimony at a hearing on the preliminary injunction.<sup>7</sup>

### **III. Discussion**

#### **A. Hayden Has Not Established a Reasonable Likelihood of Success on the Merits**

Hayden has not presented sufficient evidence to establish a reasonable likelihood that Safe Fleet’s system infringes on its ’919 patent. And even if it had, Safe Fleet has raised substantial questions about the validity of that patent, which cautions against issuing the extraordinary relief sought on this limited record.

##### **1. Insufficient Evidence of Infringement of Claims 1 and 11 of the ’919 Patent**

Pursuant to 35 U.S.C. § 271(a), “whoever without authority makes, uses, offers to sell, or sells any patented invention . . . infringes the patent.” The infringement analysis proceeds in two steps. First, the court “determines the scope and meaning of the patent claims asserted,” and second, “the properly construed claims are compared to the

---

<sup>7</sup> At oral argument on June 15, the Court asked whether Hayden was seeking a hearing to resolve any dispute of fact; Hayden’s counsel demurred. June 15, 2023 Oral Argument Tr. (“Tr.”) 80:7-10, ECF No. 37. He also declined the opportunity to submit additional affidavits. *Id.* at 79:12-13. Safe Fleet’s counsel likewise declined to request a hearing when the Court offered the opportunity to do so. *Id.* at 74:2-8. Accordingly, the Court resolves the motion on the existing record.

allegedly infringing device.” *CommScope Techs. LLC v. Dali Wireless Inc.*, 10 F.4th 1289, 1295 (Fed. Cir. 2021).<sup>8</sup> The first step presents a question of law, and the second a question of fact. *Ericsson, Inc. v. D-Link Systems, Inc.*, 773 F.3d 1201, 1214 (Fed. Cir. 2014). Infringement occurs only when “elements identical or equivalent to each claimed element of the patent[]” are present in the challenged device or process. *Posen Inc. v. Par Pharmaceutical, Inc.*, 696 F.3d 1151, 1167 (Fed Cir. 2012).<sup>9</sup> “The burden is on a patent owner to show that the properly construed claim reads on the accused device [or process] exactly.” *CommScope*, 10 F.4th at 1298.

Claim construction “begins and ends in all cases with the actual words of the claim.” *Homeland Housewares, LLC v. Whirlpool Corp.*, 865 F.3d 1372, 1375 (Fed. Cir. 2017). In general, courts define the claims by looking “to the words of the claims themselves, the specification, the prosecution history, and any relevant extrinsic evidence.” *Ericsson*, 773 F.3d at 1218. “The words of a claim are generally given their

---

<sup>8</sup> A patent “claim” is a component of the patent’s written description that “particularly point[s] out and distinctly claim[s] the subject matter which the inventor . . . regards as the invention.” 35 U.S.C. § 112. In other words, a patent claim defines the contours of the patented innovation.

<sup>9</sup> A “limitation” is a constituent part of a claim – akin to an element of a cause of action. As the Federal Circuit has explained, a claim’s limitations are “a series of limiting words or phrases” that establish the “metes and bounds of the right which the patent confers.” *Corning Glass Works v. Sumitomo Elec. U.S.A., Inc.*, 868 F.2d 1251, 1257-58 (Fed. Cir. 1989).



ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history.” *Thorner v. Sony Computer Entertainment America LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012).

Hayden asserts that Safe Fleet infringed upon claims 1 and 11 of Hayden’s ’919 patent.<sup>10</sup> Claim 1 patents a “method for detecting a traffic violation,” comprising ten limitations. ’919 Patent 36:18-37:11. Claim 11, on the other hand, patents a “system for detecting a traffic violation,” which includes every limitation of claim 1 in addition to limitations involving the use of certain generic devices (e.g., a first and second “edge device”). *Id.* 38:1-39:4.<sup>11</sup> In other words, claim 11 covers a

---

<sup>10</sup> In its opening brief, Hayden stated in a footnote that it was “asserting a likelihood of success only on claim 1 of the ’919 Patent and claim 1 of the ’017 Patent.” Pl. Br. 10 n.3. In response, Safe Fleet – reasonably relying on Hayden’s footnote – addressed only claim 1 of each patent. See Defendant’s Opposition Brief (“Opp. Br.”), at 7, ECF No. 27-2 (citing Pl. Br. 10 n.3). Hayden argues in reply that the footnote contained a “typographical error,” and that it is alleging infringement of claims 1 and 11 of each patent, as shown by the fact that it addressed all four claims in its opening brief and claim charts. Pl. Reply in Supp. of Prelim. Inj. (“Pl. Reply”) 2 n.1, ECF No. 34. Given that Hayden addressed claim 11 of each patent in its opening brief, the Court directed Safe Fleet to respond to Hayden’s arguments on those claims in a sur-reply, and considers that additional brief – see Def. Sur-reply in Opp. (“Def. Reply”), ECF No. 40 – for this motion. Importantly, now that Hayden has amended its complaint to remove all claims under the ’017 patent, only claims 1 and 11 under the ’919 patent remain relevant to the instant application.

<sup>11</sup> Hayden defines an edge device as “a device remote from a central server, equipped to capture and process data locally.” Pl. Br. 12. An edge device comprises “one or more edge device processors” (mobile computers), “one or more video image sensors” (cameras), and a “positioning unit” (a GPS receiver). *Id.* at 16; ’919 Patent 38:2-4.

particular technological configuration (comprised of generic devices) by which to implement the method set forth in claim 1.

In order to succeed on its infringement claim, Hayden must show that each of the nine limitations in Claims 1 and 11 of Hayden's '919 patent are present in Safe Fleet's ClearLane system. These nine limitations readily distribute into the three functions they enable: (1) the identification of "the restricted road area" using a "computer vision library" and a "deep learning model," *id.* at 36:27-34; (2) the identification and analysis of "vehicle attributes," *id.* at 36:26-28; and (3) the use of "bounding boxes" to bound "the restricted road area" and detect a violation, *id.* at 36:35-40.<sup>12</sup>

To rebut Hayden's contention that each of its patent's nine limitations are present in ClearLane, and to explain how ClearLane operates generally, Safe Fleet submitted the declaration of Dr. Sanjay Ranka, a professor of computer science at the University of Florida. See Decl. of Dr. Sanjay Ranka ("Ranka Decl."), ECF No. 28.

As explained below, many of the '919 patent's limitations do not appear to be present in the ClearLane system; thus, Hayden has not shown a reasonable likelihood of success on

---

<sup>12</sup> In its sur-reply, Safe Fleet asserts that "at least nine limitations of claim 11 are absent from the ClearLane system for the same reasons that the corresponding limitations are absent from claim 1." Def. Reply 3.

claim 1. And while Hayden also asserts infringement of claim 11, the Court need not conduct a separate analysis of claim 11 because, as Hayden submits, it contains all “the steps of the method of claim 1.” Pl. Br. 16. Given that Hayden has not carried its burden as to claim 1, it necessarily cannot carry its burden as to claim 11. See *Elkay Mfg. Co. v. Ebco Mfg. Co.*, 192 F.3d 973, 980 (Fed. Cir. 1999) (holding that there was no infringement where even one limitation was “not met as claimed” or “by a substantial equivalent”).

a. Identifying the Restricted Road Area Using a Computer Vision Library and a Deep Learning Model

Limitations 1(c) and 1(g) of claim 1 call for using a computer vision library and a deep learning model to identify a restricted road area.<sup>13</sup> Hayden describes its computer vision library as “a library of programming functions for computer vision,” and the deep learning model as “a neural network trained to perform a function.” See ’919 Patent 18:14-19, 35-36. The phrase “computer vision library” refers to “a defined library of computer vision algorithms that can be used for object detection.” Ranka Decl. ¶ 23. And “deep learning models” are “platform[s] for machine learning.” *Id.* ¶ 27.

---

<sup>13</sup> In its claim chart relating to the ’919 patent, Hayden has designated each limitation of claims 1 and 11 with a letter. See Pl. ’919 Patent Claim Chart, ECF No. 16-2. For ease of reference, the Court adopts those designations in this order.

Limitations 1(c) and 1(g) require, in relevant part, “identifying . . . the restricted road area . . . by applying a plurality of functions from a computer vision library to the first video and passing at least some [of] the frames of the first video . . . to a deep learning model running on the first edge device,” and then repeating this process with a “second edge device.” ’919 Patent 36:26-34, 36:49-58; see also Pl. ’919 Patent Claim Chart 5-10. Neither limitation appears, on the current record, to be present in Safe Fleet’s ClearLane system. Instead, ClearLane identifies bus lanes on streets by relying on

Ranka Decl. ¶¶ 64.

Dr. Ranka directly answered the question of whether limitations 1(c) and 1(g) are present in the ClearLine system: he explained that it “does not use a computer vision library and a deep learning model” – and “does not apply a plurality of functions” using those features – to “identify a restricted road area (e.g., bus lane).” See Ranka Decl. ¶¶ 63, 67; Suppl. Decl. of Dr. Sanjay Ranka (“Suppl. Ranka Decl.”) ¶ 18, ECF No. 40-1.<sup>14</sup> Instead, he asserts, ClearLane

---

<sup>14</sup> Based on Dr. Ranka’s qualifications and experience, as set forth in his expert declaration, see *id.* ¶¶ 0-7, the Court finds that he qualifies as a person of ordinary skill in the art of applying artificial intelligence and/or machine learning techniques to transportation and traffic solutions.

[REDACTED]

[REDACTED]

[REDACTED] Ranka Decl. ¶ 66. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] See *id.* ¶¶ 63-66.

Hayden makes several arguments in response, none of which is convincing. First, Hayden argues that the distinction between how the two systems determine the location of a bus lane is “a difference in name only,” and that Safe Fleet conflates the initial process of “identifying bus lanes at the system level” with the case-by-case determination of violations. Pl. Reply 3.<sup>15</sup> But at least as to limitations 1(c) and 1(g), the entire dispute is about whether Hayden and Safe Fleet’s systems use the same method for identifying bus lanes – and the evidence at this stage suggests that their methods differ meaningfully. Dr. Ranka’s declaration shows that although Hayden’s patent calls for using a computer vision library and a deep learning model to identify the restricted road area, ClearLane determines

---

<sup>15</sup> In its reply brief, Hayden states that “[t]o narrow the issues for resolution, Plaintiff focuses on Claim 11 of the ‘919 Patent.” Reply Br. 2. Hayden adds in a footnote that it “expressly reserves the right to dispute all of Defendants’ positions at a later point in this Action.” *Id.* at 2 n.2. Nevertheless, because, as discussed above, claim 11 includes every limitation of claim 1, Hayden’s arguments relating to claim 11 bear equally on claim 1 in light of the issues in dispute.

whether a vehicle is in a bus lane without using either of those features.

Because Hayden has not carried its burden as to limitations 1(c) and 1(g), a preliminary injunction cannot issue. See *Elkay*, 192 F.3d at 980.

b. Identifying "Vehicle Attributes"

Collectively, limitations 1(c), 1(e), 1(g), 1(i), and 1(j) require identifying, transmitting, and comparing "vehicle attributes" (*i.e.*, a vehicle's make, model, type, or color). See '919 Patent 10:9-17, 12:1-3, 36:28-37:11; Pl. '919 Patent Claim Chart 5-18. But the ClearLane system does not appear to identify, or otherwise process, information regarding these types of "vehicle attributes"; it instead relies entirely on a vehicle's license plate to identify and track it. Hayden seeks to overcome this distinction through its contention that the word "attributes," as used in the patent, should subsume the "location" of a license plate on a vehicle, in addition to features like color, make and model. Pl. Reply at 4-5.

The meaning of "vehicle attributes" in this context is a question of law. See *Teva Pharmaceuticals USA, Inc. v. Sandoz, Inc.*, 574 U.S. 318, 321 (2015) ("the construction of a patent, including terms of art within its claim, is not for a jury but exclusively for the court to determine"). In that construction, courts consider dictionary definitions and the

examples included in a patent's description. *See, e.g., Schaefer Fan Co. v. J & D Mfg.*, 265 F.3d 1282, 1288-89 (Fed. Cir. 2001) (approving district court's use of dictionaries to determine ordinary meaning); *Teleflex, Inc. v. Ficosa N. Am. Corp.*, 299 F.3d 1313, 1324 (Fed. Cir. 2002) (explaining that "[t]he words used in the claims are interpreted in light of the intrinsic evidence of record, including the written description").

Dictionaries tend to define "attributes" as qualities "inherent in" their hosts. The Oxford English Dictionary, for example, defines attribute as a "quality or character considered to belong to or be inherent in a person or thing." *Attribute*, OXFORD ENGLISH DICTIONARY (2d ed. 1989). Likewise, Webster's Third speaks of "a quality intrinsic, inherent, naturally belonging to a thing or person." *Attribute*, WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY (3d ed. 2002); *see also Attribute*, WEBSTER'S SECOND NEW INTERNATIONAL DICTIONARY (2d ed. 1959) ("A quality considered as belonging to, or inherent in, a person or thing."). The '919 patent description supports this construction, because it identifies examples of vehicle attributes including "recognized color, make/model, and vehicle type" – all qualities inherent in the given vehicle itself. '919 Patent 23:41-42.

Given that construction, the reliance on "vehicle attributes" is a limitation in Hayden's patent that does not

appear to be present in the defendants' competing product. There is a straightforward category difference between "attributes" like the make, model, and color of a car, on the one hand, and the location of the license plate, on the other. The color and model name of a car are determined by the manufacturer, and relatively fixed. The location of the license plate is prescribed by regulation, *see, e.g.,* N.Y. Veh. & Traf. Law § 402, not the manufacturer, and it does not generally vary from vehicle to vehicle.

In response, Hayden contends only that Safe Fleet's construction is "incorrect" – though it fails to explain why – and declines to offer an alternative definition. Pl. Reply 4. I conclude, in concurrence with Safe Fleet, that the word "attribute" refers to qualities inherent in the vehicle.

Thus, on the existing record, Hayden has not shown a reasonable likelihood of success in proving that ClearLane identifies, transmits, and compares vehicle attributes. Hayden has therefore not carried its burden as to limitations 1(c), 1(e), 1(g), 1(i), and 1(j) of claim 1.

c. Bounding Boxes

Limitations 1(d) and 1(e) of '919 claim 1 require, in relevant part, "bounding" the restricted road area "in a plurality of first bounding boxes," and "detecting" a "potential traffic violation . . . based in part on overlap of the



plurality of first bounding boxes.” ’919 Patent 36:35-40. But ClearLane does not appear to use bounding boxes to identify the restricted road area and detect a violation; instead, the record shows that it relies on [REDACTED]

[REDACTED] Ranka Decl. ¶¶ 31-33.

Hayden defines bounding boxes as “boxes surrounding any number of objects detected within a video frame” – including, for example, the restricted road area. Pl. Br. 12. Even while accepting this broad definition, Safe Fleet still disputes that ClearLane uses bounding boxes to bound the restricted road area and detect a violation based on an overlap of such boxes. Opp. Br. 12.

In connection with this limitation, at least two meaningful distinctions appear between the *modus operandi* of Hayden’s ABLE system and Safe Fleet’s ClearLane system. The first concerns the bounding of vehicles: Hayden’s bounding boxes necessarily expand beyond the car itself, because a box has ninety-degree corners, while a car generally does not.

ClearLane’s [REDACTED]

[REDACTED] Ranka

Decl. ¶ 32. [REDACTED]  
[REDACTED]  
[REDACTED]

[REDACTED]

[REDACTED] *Id.* ¶¶ 31-33.<sup>16</sup>

Hayden responds that the defendants really are using bounding boxes to identify vehicles, even if they do not call them by that name: that a bounding box is any “shape” that “encloses a detected object.” Pl. Reply 4.<sup>17</sup> Thus, Hayden argues, because the [REDACTED] [REDACTED] it is employing shapes to “bound” the vehicle. *Id.* This response is dubious: projecting bounding boxes and comparing their locations on a screen is a different endeavor from [REDACTED] [REDACTED]

Even if Hayden’s argument about the bounding of vehicles was accepted, however, the second distinction is even more meaningful: Safe Fleet’s ClearLane system does not bound the roadway at all, let alone detect overlapping boxes in the same manner as Hayden’s system. Instead, as discussed above, the system compares the location of the vehicle in question with

---

<sup>16</sup> Dr. Ranka refers to the process of identifying and marking objects in an image on a pixel-by-pixel basis as “image segmentation.” Ranka Decl. ¶ 32.

<sup>17</sup> Hayden supplies a new definition of a “bounding box” in its reply, deviating from the definition used in its opening brief. Compare Pl. Reply 4 with Pl. Br. 12 (“boxes surrounding any number of objects detected within the video frame”). Safe Fleet contends that Hayden has therefore waived the argument. See Def. Reply. 5 (citing *Thomas v. Roach*, 165 F.3d 137, 146 (2nd Cir. 1999)). In any case, as set forth herein, Hayden’s arguably revised definition of bounding boxes does not alter the conclusion on this issue.

[REDACTED]

[REDACTED] *Id.* ¶¶ 73–75. [REDACTED]

[REDACTED] [REDACTED] [REDACTED]

[REDACTED] *Id.* ¶ 44. In other words, the

ClearLane system never compares two boxes to determine whether they overlap, whereas Hayden’s patent relies on the detection of overlapping boxes as its core methodology. Hayden has not bridged this apparent gap.

While Hayden may ultimately show at trial that this seemingly crucial distinction between how the two systems detect a violation is insubstantial, on the existing record Hayden has not demonstrated a reasonable likelihood that it will – or can – do so.

2. Substantial Questions Regarding the Patents’ Validity

By statute, patents enjoy a presumption of validity. 35 U.S.C. § 282; *Nature Simulation Sys. Inc. v. Autodesk, Inc.*, 50 F.4th 1358, 1361 (Fed. Cir. 2022). This presumption applies with equal force “during preliminary injunction proceedings as at other stages of litigation.” *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1377 (Fed. Cir. 2009). Still, “a patent holder seeking a preliminary injunction bears the burden of establishing a likelihood of success on the merits with respect to the patent’s validity.” *BlephEx, LLC v. Myco Indus., Inc.*, 24 F.4th 1391, 1398–99 (Fed. Cir. 2022). Therefore, if

19

the alleged infringer challenges the patent's validity, and the trial court concludes – “after considering the evidence on both sides of the validity issue” – that the defendant has raised a “substantial question” of invalidity, the court should deny a preliminary injunction. *Titan Tire*, 566 F.3d at 1378-79.

To raise such a question at this stage, the alleged infringer bears “the initial burden of going forward with evidence to support its invalidity allegation.” *Id.* at 1376. This burden implicates the need for “both factual evidence and factual and legal argument.” *Id.* at 1376 n.4. “To fulfill that burden,” however, the defendant “need only assert a defense that [the plaintiff] cannot show lacks substantial merit.” *BlephEx*, 24 F.4th at 1399. In other words, when the alleged infringer asserts the invalidity of the patent (with some argument and factual evidence), the burden shifts to the patent holder to show that the defense lacks substantial merit.

To rebut the invalidity argument, the patent holder can, for example, show that the patent “had successfully withstood previous validity challenges,” or cite “a long period of industry acquiescence in the patent's validity.” *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1359 (Fed. Cir. 2001). Then, weighing both parties' evidence, the court will determine whether there is a “substantial question” as to the patent's validity. *Titan Tire*, 566 F.3d at 1379.

Safe Fleet has raised substantial questions as to whether Claim 1 of Hayden's patent may be invalid. As discussed in more detail below, this invalidity arises, per Safe Fleet, because Claim 1 appears merely to combine two pieces of readily available preexisting technology in an obvious way. Namely, Safe Fleet maintains that Hayden has adopted the core features and functions of the "LaneWatch" ABLE system deployed by Siemens on MTA buses in 2019. See *supra* at 4-5. The operative difference between LaneWatch and Hayden's systems, according to Safe Fleet, is only that Hayden has integrated generic, widely available (albeit concededly modern) tools into Siemens' preexisting system – specifically, computer vision libraries and a deep learning model.

a. Genuine Innovation Over Prior Art

In addition to the wholesale exclusion of certain concepts (e.g., abstract ideas) from patent protections, federal law prohibits the issuance of a patent when a claimed invention fails to offer genuine innovation when compared with technology that preceded it. A claimed invention is unpatentable, for example, when "the differences between [it] and the prior art are such that the claimed invention as a whole would have been obvious [at the time of the claimed invention] to a person having ordinary skill in the art to which the claimed invention pertains." 35 U.S.C. § 103. Prior art includes all previously

existing products and public information that are "reasonably pertinent to the particular problem with which the invention was involved." *Ruiz v. A.B. Chance Co.*, 234 F.3d 654, 664 (Fed. Cir. 2000). The prior art need not have received a patent; instead, it can simply be "knowledge or use which is accessible to the public." *Carella v. Starlight Archery & Pro Line Co.*, 804 F.2d 135, 139 (Fed. Cir. 1986); see also *Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 1570 (Fed. Cir. 1988) (published articles disclosing certain claim limitations constituted prior art).

The Federal Circuit has also explained that "to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant." *In re Kotzab*, 217 F.3d 1365, 1370 (Fed. Cir. 2000). In other words, it is not enough for Safe Fleet to show that every element of Hayden's patent preexisted the patent, because "[m]ost if not all inventions arise from a combination of old elements." *Id.* at 1369. There must also be evidence that one of ordinary skill in the art would have been "motivat[ed] to modify" those old elements and combine them into this new form. *Id.* at 1370. Evidence of that motivation may come from explicit statements or may be implicit in what the prior art "and the nature of the

problem to be solved as a whole would have suggested to those of ordinary skill in the art.” *Id.*

b. Combination of Siemens’ LaneWatch with Other Prior Art

This case presents substantial questions about whether the ’919 patent consists of an obvious combination of preexisting elements. 35 U.S.C. § 103; *see Carella*, 804 F.2d at 139. As Safe Fleet argues, Hayden’s system appears to combine the basic infrastructure of the Siemens ABLE system – an early ABLE system used successfully by the MTA pursuant to a prior contract, *see Carson Decl.* ¶ 21; *Ranka Decl.* ¶ 95-107; *supra* at 4-5 – with readily available commercial products. To determine whether a patent has non-obvious difference when compared to preexisting technology (*i.e.*, “prior art”), courts must consider four factors: “1) the scope and content of the prior art; 2) the level of ordinary skill in the art; 3) the differences between the claimed invention and the prior art; and 4) secondary considerations of nonobviousness,” including “commercial success, long-felt but unresolved need, failure of others, copying, and unexpected results.” *Ruiz*, 234 F.3d at 662-63. Considering these factors on the existing record, Safe Fleet has raised a substantial question as to whether the ’919 patent is invalid under Section 103.

Dr. Ranka states that the Siemens system “constitutes a ‘method for detecting a traffic violation’” that employs the same “generic computing devices” as Hayden “to implement its ABLE functionality,” Ranka Decl. ¶¶ 135, 140 – namely, “video image sensors,” “processors,” and a “server.” ‘919 Patent 2:2, 2:29, 2:19.<sup>18</sup> He submits that each limitation of claims 1 and 11 was in public use prior to the claimed invention, and would have been obvious to a person of ordinary skill in the art. Ranka Decl. ¶¶ 148-150; Suppl. Ranka Decl. ¶¶ 31-34. Further, he states that a person of ordinary skill in the art would have been able “to combine the Siemens System with the admitted prior art” – *i.e.*, the commercially available products identified in the ‘919 patent, including computer vision libraries and a license plate detection method. *Id.* ¶¶ 128, 150.<sup>19</sup> Ranka opines that “the combination of these [elements] would not provide unexpected results because . . . the techniques disclosed in these references were well-known and routinely used.” *Id.*

Hayden makes two arguments in response. First, it argues that because Dr. Ranka has not examined the Siemens’ system’s code itself, he is unqualified to testify about how the

---

<sup>18</sup> Ranka concedes that he has not yet “been able to access or review the software used by the Siemens System.” Ranka Decl. ¶ 144.

<sup>19</sup> Dr. Ranka assumed that the admitted prior art for the ‘919 patent included the You Only Live One (YOLO) v3 deep learning model and a version of OpenALPR, a license plate recognition program. *Id.* ¶ 128; *see also* ‘919 Patent 18:52-55 (discussing YOLO v3); *id.* 19:20-22 (discussing OpenALPR).



system operates. Pl. Reply. 7 (quoting June 12, 2023, Deposition of Dr. Sanjay Ranka 77:15, ECF No. 33-5). But that ignores the substantial universe of evidence outside of the code itself that helps explain how LaneWatch functioned. Ranka's declaration identifies several sources on which he based his opinion of the Siemens system, including documents from Siemens itself and documents relating to Siemen's ABLE system contract with the MTA, which taken together describe the system in considerable detail. See Ranka Decl. ¶¶ 95-107; see also, e.g., ECF No. 28-3 (December 2019 Siemens press release about launch of ABLE system in New York City); ECF No. 28-9 (Schedule K of MTA ABLE contract with Siemens); ECF No. 28-10 (2016 Siemens brochure of civil enforcement solutions). At this stage of the litigation, Ranka had a sufficient evidentiary basis to evaluate the Siemens system and compare it to Hayden's ABLE system (and notably, Hayden has not presented countervailing evidence regarding LaneWatch).

Hayden also argues that the Siemens system was "not an AI-driven ABLE system, but rather was 'logic-based,'" Pl. Reply at 11, and that no person of ordinary skill in the art "would have been motivated to use such a flawed system as the starting point to develop" the '919 patent. *Id.* This argument does not undermine Safe Fleet's evidence that a person of ordinary skill in the art would have been motivated to resolve those flaws by

combining the Siemens system with other readily available software to create an ABLE system like Safe Fleet's. See *id.* ¶¶ 151-52. Ranka explains that such a person "would have found it rudimentary to use the well-known computer vision libraries and deep learning models to identify objects in images like vehicles, license plates, and bus lanes," and that guides on how to "implement these techniques were widely available." *Id.* ¶ 150. Further, contrary to Hayden's lack-of-motive argument, Ranka states that the MTA's request for information provided a commercial incentive to develop a system fitting the MTA's "specification of using video cameras on buses, processors on buses, and a remote server to create evidence packages for violations of bus lane restrictions." *Id.* ¶ 151.

Notably, Ranka cites the MTA's statement that it would consider "commercial off-the-shelf (COTS) systems" in addition to newly developed systems, indicating that the MTA understood the basic technology to have already existed in the market. *Id.* As Ranka explains, a person of ordinary skill in the art thus would have been motivated to "use known object detection techniques rather than inventing new" ones to "economically and efficiently devise a solution." *Id.* This raises a substantial question as to whether Hayden's patent truly innovates beyond the Siemens system, or whether it merely combines the core of that system with readily available "deep learning" models and

computer vision libraries. Hayden has not satisfactorily answered or diffused the relevance of that question.

**B. The Public Interest Favors Denying the Injunction**

Because Hayden has not shown a reasonable likelihood of success on the merits as to either of the two asserted claims, it cannot obtain a preliminary injunction. Nevertheless, it is worth noting that the public interest, too, favors denying the injunction. The letter of intent that the MTA issued to Safe Fleet on May 4, 2023, contemplated that Safe Fleet would complete 523 installations by the end of 2023. Pulskamp Decl. ¶¶ 16, 17, 23. An injunction would further delay those installations, which would leave the MTA with less capacity than it would otherwise have to enforce traffic laws, detect violations, and collect revenue through enforcement. The public has a clear interest in the enforcement of traffic laws to promote safe streets and the efficient flow of traffic. See, e.g., *Clear Channel Outdoor, Inc. v. City of New York*, 594 F.3d 94, 103 (2d Cir. 2010) (“maintaining traffic safety” is a substantial government goal).

Although Hayden contends that denying the injunction would undermine the public interest in “encouraging innovation,” Pl. Br. 25, this factor exists in every patent case, and it carries diminished weight here given that Hayden has not shown a reasonable likelihood of success on its infringement claims.

*See Pass & Seymour, Inc. v. Hubbell Inc.*, 532 F. Supp. 2d 418, 434 (N.D.N.Y. 2007) (opining that “the public’s interest is not in the end best served by removing what may well be a non-infringing product from the market”).

#### **IV. Conclusion**

For the foregoing reasons, Hayden’s motion for a preliminary injunction is denied. This Order will be filed under seal to give the parties the opportunity to propose appropriate redactions, with supporting authority, within fourteen days.

SO ORDERED.

/s/ Eric Komitee  
ERIC KOMITEE  
United States District Judge

Dated: February 23, 2024  
Brooklyn, New York